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RPTO/SB/21 (08-00)

Please type a plus sign (+) inside this box -> [+] Approved for use through 10/31/2002. OMB 0651-0031 U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. Application Number 09/912,068 RANSMITTAL Filing Date 07/23/01 FORM **First Named Inventor** Zhang for all correspondence after initial filing) **Group Art Unit** 2185 **Examiner Name** Unassigned 20510-001700US (C/) Total Number of Pages in This Submission 1 **Attorney Docket Number** ENCLOSURES (check all that apply) After Allowance Communication (69) Fee Transmittal Form (for an Application) Group Appeal Communication to Board of Fee Attached Drawing(s) Appeals and Interferences Appeal Communication to Group Amendment / Response Licensing-related Papers (Appeal Notice, Brief, Reply Brief) Petition Routing Slip (PTO/SB/69) After Final Proprietary Information and Accompanying Petition Petition to Convert to a Affidavits/declaration(s) Status Letter Provisional Application Power of Attorney, Revocation Other Enclosure(s) Extension of Time Request Change of Correspondence Address (please identify below): 1) seventeen (17) cited references Terminal Disclaimer Express Abandonment Request 2) Return receipt postcard Request for Refund Information Disclosure Statement CD, Number of CD(s) The Commissioner is authorized to charge any additional fees to Certified Copy of Priority Deposit Account 20-1430. Remarks Document(s) Total number of pages does not include cited references. Response to Missing Parts/ Incomplete Application Response to Missing Parts under 37 CFR 1.52 or 1.53 SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT Townsend and Townsend and Crew LLP Firm and Reg No. 42,624 Charles L. Hamilton Individual name Signature Date October 9, 2001 **CERTIFICATE OF MAILING** I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on this plate: 19 Typed or printed name Chris Fitting Date Signature

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PA 3175190 v1



Attorney Docket No.: 020510-001700US



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Song Zhang et al.

Application No.: 09/912,068

Filed: July 23, 2001

For: METHOD AND SYSTEM FOR TURBO ENCODING IN ADSL

Assistant Commissioner for Patents Washington, D.C. 20231

Examiner:

Unassigned

Art Unit:

2185

INFORMATION DISCLOSURE

STATEMENT UNDER 37 CFR §1.97 and

§1.98

Technology Center 2100

Sir:

The references cited on the attached PTO/SB/08B form are being called to the attention of the Examiner. Copies of the references are enclosed. It is respectfully requested that the cited references be expressly considered during the prosecution of this application, and the references be made of record therein and appear among the "references cited" on any patent to issue therefrom.

As provided for by 37 CFR 1.97(g) and (h), no representation is being made that a search has been conducted or that this statement encompasses all the possible relevant information, and no inference should be made that the information and references cited are, or are considered to be material to patentability because they are in this statement. No inference should be made that the information and references cited are prior art merely because they are in this statement.

Applicant believes that <u>no fee is required</u> for submission of this statement, since it is being submitted prior to the first Office Action. However, if a fee is required, the Commissioner is authorized to deduct such fee from the undersigned's Deposit Account No. 20-1430. Please deduct any additional fees from, or credit any overpayment to, the above-noted Deposit Account.

Respectfully submitted,

Charles L. Hamilton Reg. No. 42,624

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Substitute for form 1449B/PTO

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

of 1

Complete if Known				
Application Number	09/912,068			
Filing Date	07/23/01			
First Named Inventor	Zhang			
Group Art Unit	2185			
Examiner Name	Unassigned			
Attorney Docket Number	20510-001700US			

_		OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS	 	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²	
	1,,	Bahl et al., "Optimal Decoding of Linear Codes for Minimizing Symbol Error Rate," <u>IEEE</u> <u>Transactions on Information Theory</u> , IT-20:284-287 (1974).		
	2 /	Benedetto et al., "Parallel Concatenated Trellis Coded Modulation," <u>IEEE ICC96</u> , pgs. 974-978 (1996).		
	3 /	Benedetto et al., "Serial Concatenation of Interleaved Codes: Performance Analysis, Design, and Iterative Decoding," TDA Progress Report 42-126, pages 1-26, Auust 15, 1996.	,	200
	4	Berrou, C., "Near Optimum Error Error Correcting Coding And Decoding: Turbo-Codes," <u>IEEE</u> <u>Trans. Communications</u> , 44(10):1261-1271 (1996).	00	CEIV
	5 ,	Chase, D., "A Class of Agorithms for Dcoding Block Cdes With Channel Measurement Information," IEEE Transactions On Info. Theory, IT-18(1):170-181 (1972).	thnologi	29200
	6	Divsalar et al., "Turbo Codes for PCS Applications," <u>IEEE ICC95</u> , Jet Propulsion Laboratory, Cal Inst. Tech., pgs. 54-59 (1995).		PECEIVE 1 9 2001
	7 /	Divsalar et al., "Multiple Turbo Codes for Deep-Space Communications," <u>TDA Progress Report</u> 42-121, pages 66-77, May 15, 1995.		,00
	8 \	Gallager, R.G., "Low-Density Parity-Check Codes," <u>IRE Transactions on Information Theory</u> , pages 21-28 (1992).		
	9 4	Hagenauer et al., "A Viterbi Algorithm with Soft-Decision Outputs and its Applications," <u>IEEE</u> <u>Global Telecommunications Conference</u> , held 11/27-30/1989, Dallas TX., pgs. 1680-1686.		
	10 _	Le Goff et al., "Turbo-Codes and High Spectral Efficiency Modulation," <u>IEEE ICC94</u> , pages 645-649, (1994).		
	11 (MacKay, D., "Good Error-Correcting Codes Based on Very Sparse Matrices," <u>IEEE Transactions on Info. Theory</u> , 45(2):399-431 (1999).		
	12 /	MacKay et al., "Near Shannon limit performance of low density parity check codes," <u>Electronics</u> <u>Letters</u> , 32(18):1645-1646 (1996).		
	13	Pyndiah, R.M., "Near-Optimum Decoding of Product Codes: Block Turbo Codes," <u>IEEE Transactions on Communications</u> , 46(8):1003-1010 (1998).		
	14	Robertson, P., "Illuminating the Structure of Code and Decoder of Parallel Concatenated Recursive Systematic (Turbo) Codes," <u>IEEE GLOBECOM94</u> , pages 1298-1303 (1994).		
	15	Robertson et al., "Bandwith-Efficient Turbo Trellis-Coded Modulation Using Punctured Component Codes," IEEE J. Selected Areas in Communications, 16(2):206-218 (1998).		
	16	Ungerboeck, G., "Channel coding with Multilevel / Phase Signals," <u>IEEE Trans. Info. Theory</u> , IT-28(1):55-67 (1982).		
	17	"New Proposal of Turbo Codes for ADSL Modems," ITU Standard Collection, Study Group 15, Question 4/15, BA-020R1, Antwerp, Belgium, June 19-23, 2000.		

Examiner	Date	
Signature	Considered	

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